REVIEW AND COMMENT RECORD

1. Date: February 5, 1993

2. Document Title: Draft Final Technical Memorandum No. 5: Revised Soil Gas Sampling Plan; January 7, 1993 (Revision 1)

Reviewing Agency: HAZWRAP **Date:** January 28, 1993

Item	Comment(s)	Disposition	Status
1	Section 1.2, p. 1, third paragraph, and p. 2, second paragraph: Please clarify what borings are being referred to in this section. In December of 1992 borings were being installed at the Original Landfill.	The text has been modified to read, "Plumes of volatile organics identified by the soil gas survey will be further assessed by the subsequent drilling of soil borings within the plumes, as specified in the OU 5 Work Plan." These are not the same borings as those installed in December 1992.	Comment accepted.
2	Section 2.3, p. 6-7: It is stated in the first paragraph of this section that the results of the EM survey provided the primary means of delineating the landfill boundaries. However, the subsequent discussion does not show what is the actual contribution of the EM survey to the identification of landfill boundaries. No obvious relationship between the anomalies of the geophysical survey and the landfill boundaries can be seen from Figure 3. Please indicate the landfill boundaries that were identified or modified based on the geophysical survey to support the statement or drop the statement.	The statement has been dropped from the text.	Comment accepted.

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3	Section 3.0, p. 9, second paragraph: A 10-foot radius of influence calculated using the transient subsurface pressure distribution equation (Equation I in the text) is used in designing a secondary sampling grid. The assumption behind the inclusion of this calculation and proposed sampling based on it appears to be that it is necessary to have complete (overlapping) coverage of the area by the soil gas survey. This assumption is not valid; soil gas surveying is a screening technique used to map large-scale anomalies, not detect every occurrence of VOCs in soil gas. It is recommended that secondary and tertiary soil gas sampling not be done (see Major Concerns). However, if the Equation I calculation is retained in the document, input parameters need to be better documented. It is stated that the result was obtained using the operating conditions expected at the Operable Unit (OU) 5 landfill, but the parameters that represent the OU 5 conditions were not shown.	The OU 5 Work Plan (page 7-9) specifies that the sampling grid be reduced at the downgradient perimeter of the landfill, over areas of suspected buried metallic materials based on the magnetometer and EM surveys, and over areas where volatiles are found during the 100-foot grid soil gas survey. A goal of the soil gas survey is to detect rivulets of volatile organics at the downgradient perimeter of the landfill. The text concerning Equation I has been modified to include the parameters that represent the conditions at OU 5.	Comment rejected. Comment accepted.
4	Section 3.2, p.10, third paragraph: The secondary sampling grid is proposed based on magnetic anomalies. It has not been demonstrated, however, that a relationship exists between magnetic anomalies and VOCs in the landfill. As discussed in the Major Concerns, any correlation with EM data should show in the 100-foot grid soil gas data. Please provide additional rationale for the secondary grid sampling or cancel the samples on the secondary grid since the secondary grid is not required by either the IAG or the Work Plan.	See Disposition above.	Comment rejected.

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5	Section 3.3, p. 11, third paragraph: It is proposed that five soil cores will be collected instead of four samples required by the IAG and Work Plan. The reason is that the proposed sampling plan will provide a more accurate verification of the soil gas analyses against the full spectrum of detection, whereas random sampling may skew the results. This reasoning is can be (sic) questioned on two reasons: first, VOC concentrations in soil samples do not necessarily have a direct relation to soil gas concentrations, therefore, the design locations related to 25%, 50%, 75% soil gas concentrations do not have any direct meaning; second, screening methods should be biased sampling that determines whether contamination exists. The soil gas studies are often developed to produce results which are meant to be "skewed". It is suggested that the proposed additional sample be dropped.	The soil core program has been deleted from the soil gas survey. The results of the soil gas survey will be verified by resampling 10 percent of the locations exhibiting anomalous readings and 10 percent of the locations exhibiting readings below three times the laboratory detection limit. The maximum number of repeat samples will be 27, so as not to exceed the 370 samples specified in the OU 5 Work Plan. The text of the TM has been changed to reflect this.	Comment accepted.